

Remarks

This communication is considered fully responsive to the non-final Office Action mailed June 23, 2005 and made Final. Claims 1-9, 11-19, 21-26, and 28-29 were examined and stand rejected. Claims 1, 13, 18, and 24 are currently amended. No further claims are canceled. No new claims have been added. Reexamination and reconsideration of claims 1-9, 11-19, 21-26, and 28-29 are respectfully requested.

No New Matter

No new matter is introduced by the amendments to claims 1, 13, 18, and 24. Support for the amendments is found, e.g., in claim 28 as originally filed.

Claim Rejections - 35 U.S.C. 103(a)

The Office Action rejected claims 1-9, 11-19, 21-26, and 28-29 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,408,406 to Parris (hereinafter referred to as "Parris") in view of U.S. Patent No. 6,571,354 to Parks, et al. (hereinafter referred to as "Parks"). The Applicant respectfully traverses this rejection.

Claim 1 positively recites "intercepting communications between a computer system and said storage device" (emphasis added). Parris and Parks fail to teach or suggest at least this recitation.

The Office Action cites to Fig. 1, which is a block diagram of a hard disk drive system (see, e.g., Col. 3, lines 53-57). The Office Action also cites to Col. 1, lines 12-19, which is a "Description of the Related Art" discussing a basic hard disk drive. The Office Action also cites to Col. 4, lines 43-53 which states that "historical performance parameters include running logs of both recoverable and non-recoverable errors encountered during the operation of the disk drive targets." However, none of these citations disclose intercepting communications between a computer system and a storage device.

Furthermore, claim 1 is amended to recite "responding to a decline in the performance . . . by automatically reallocating at least some data on said storage device to enhance continued operation of the storage device" (emphasis added). Parris and Parks fail to teach or suggest at least this recitation.

As previously noted by Applicant and the Examiner (e.g., page 6 of the Office Action), Parris only discloses marking the disk drive as failed. In addition, Parks discloses removing the storage device based on a decline in performance. See, e.g., Abstract stating "the first particular storage device can be gracefully removed from the network." Neither reference alone or in combination teaches or suggests reallocating data to enhance continued operation of the storage device.

For at least the foregoing reasons claim 1 is believed to be allowable over the cited references and Applicant respectfully requests withdrawal of the rejection of claim 1.

Claims 2-9 and 11-12 depend from claim 1, which is believed to be allowable. Therefore, claims 2-9 and 11-12 are also believed to be allowable for at least the same reasons as claim 1. Withdrawal of the rejection of claims 2-9 and 11-12 is respectfully requested.

In addition, claim 3 further recites "correcting said measured access time for system overhead." The Office Action cites to Col. 8, lines 34-59 in Parris as disclosing this recitation. However, this citation only discloses "corrected and uncorrected write errors" and has nothing to do with correcting a measured access time for system overhead.

Claim 5 further recites "determining an access location on said storage device and an access frequency for data stored thereon based on said intercepted communications." The Office Action cites to Col. 3, lines 1-12 in Parris as disclosing this recitation. However, this citation only discloses "non-destructive read/write tests" and has nothing to do with determining an access location and access frequency based on intercepted communications.

Claim 6 further recites "determining an access location on said storage device and an access duration for data stored thereon based on said intercepted communications." The Office Action cites to Col. 3, lines 7-12 in Parris as disclosing this recitation. Again, this citation only discloses "non-destructive read/write tests," and does not teach or suggest the claimed recitation.

Claim 9 positively recites "automatically backing-up data stored on said storage device." The Office Action cites to Figure 3 and Col. 5, lines 26-52 as

disclosing this recitation. However, Figure 3 is merely "an illustration of a portion of a data surface of a hard disk drive, showing zone regions on the disk." See, e.g., Brief Description of the Drawings at Col. 3, lines 61-62. The discussion at Col. 5, lines 26-52 describes how data is stored on the hard disk drive surface. There is no teaching or suggestion of automatically backing-up data.

Claim 11 positively recites "reallocating at least some data on said storage device is based on usage patterns of said data." The Office Action cites to Figures 3 and 5, and Col. 1, lines 25-30 as describing "usage patterns of data." However, this citation instead describes a defect discovery procedure wherein defective data sites are identified by comparing the data pattern read from the disk surface with the known data pattern written to the disk surface and has nothing to do with reallocating data based on usage patterns of the data.

Claim 12 further recites "defragmenting at least a portion of said storage device." The Office Action cites to Col. 5, line 39 through Col. 6, line 14 as disclosing this recitation. This citation describes the hard disk drive shown in Figure 3, but fails to teach or suggest defragmenting the storage device.

The Office Action rejected claims 13-23 on the same basis as claims 1-12. However, claim 13 positively recites "program code for intercepting communications between a computer system and said storage device" (emphasis added). In addition, claim 13 is amended to recite "program code for responding to a decline in the performance of said storage device by backing up at least some data . . . to enhance continued operation of said storage device" (emphasis added).

Parris and Parks fail to teach or suggest at least these recitations as discussed above for claim 9.

For at least the foregoing reasons claim 13 is believed to be allowable over the cited references and Applicant respectfully requests withdrawal of the rejection of claim 13.

Claims 14-19 and 21-23 depend from claim 13, which is believed to be allowable. Therefore, claims 14-19 and 21-23 are also believed to be allowable for at least the same reasons as claim 13. Withdrawal of the rejection of claims 14-19 and 21-23 is respectfully requested.

Furthermore, the dependent claims include additional recitations that are neither taught nor suggested by the cited references, as discussed above in more detail with regard to the claims depending from claim 1. Claims 14-19 and 21-23 are therefore also believed to be allowable on these separate grounds.

The Office Action rejected claims 24-27 on the same basis as claims 1-12. However, claim 24 positively recites "means for evaluating communications . . . based at least in part on intercepted communications with said storage device" (emphasis added). In addition, claim 24 is amended to recite "means for enhancing the performance of said storage device by reallocating at least some data on the storage device" (emphasis added). Parris and Parks fail to teach or suggest at least this recitation as discussed above for claim 1.

For at least the foregoing reasons claim 24 is believed to be allowable over the cited references and Applicant respectfully requests withdrawal of the rejection of claim 24.

Claims 25-26 depend from claim 24, which is believed to be allowable. Therefore, claims 25-26 are also believed to be allowable for at least the same reasons as claim 24. Withdrawal of the rejection of claims 25-26 is respectfully requested.

The Office Action rejected claims 28 and 29 on the same basis as claims 1, 5-6, and 10. However, claim 28 positively recites "intercepting communications between a computer system and said storage device" (emphasis added). In addition, claim 28 positively recites "reallocating at least some of said data on said storage device to enhance the performance of said storage device based on said analyzed communications" (emphasis added). Parris and Parks fail to teach or suggest at least this recitation as discussed above for claim 1.

For at least the foregoing reasons claim 28 is believed to be allowable over the cited references and Applicant respectfully requests withdrawal of the rejection of claim 28.

Claim 29 depends from claim 28 and therefore claim 29 is believed to be allowable for at least the same reasons as claim 28. Withdrawal of the rejection of claim 29 is respectfully requested.

Furthermore, claim 29 positively recites "determining access location, access frequency, and access duration for said data on said storage device." As

discussed above for claims 5 and 6, at least this recitation is not taught or even suggested by the cited references. Therefore, claim 29 is believed to be allowable on these separate grounds.

Conclusion

The Applicant respectfully requests that a timely Notice of Allowance be issued in this matter.

Respectfully Submitted,

Dated: 9-22-2005 By: Mark D. Trenner

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